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FOURTH EDITION

The Penguin Dictionary of ELECTRONICS

Edited by Professor David Howard

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shunt stabilization ➤stabilization.

sideband ➤carrier wave; amplitude modulation.

sideband splatter A form of distortion in transmitted signals, in particular amplitude-modulated signals, where the degree of modulation exceeds 100%. ➤amplitude modulation.

side frequency ➤carrier wave.

side lobe ➤antenna pattern.

siemens Symbol: S. The ➤SI unit of electrical ➤conductance, ➤susceptance, and ➤admittance. An element possesses a conductance of one siemens if it has electrical ➤resistance of one ohm. The siemens has replaced the ➤mho.

Siemen's electrodynamometer An ➤electrodynamometer that may be calibrated as an ammeter, voltmeter, or wattmeter. The signal to be measured produces an electromagnetic torque on the movable coil that in turn is balanced against the torque of a spiral spring connected to it by adjusting a calibrated torsion head attached to the spring. At the balance position the deflection of the movable coil is zero, and the value of the measured parameter is given by the setting of the torsion head.

signal A variable electrical parameter, such as voltage or current, that is used to convey information through an electronic circuit or system. The sequence of values of the parameter, recorded against time, represents the information. An *analogue signal* varies continuously in amplitude and time. The amplitude of a *digital signal* varies discretely: it will be at any one of a group of different levels, usually two, at any particular time.

In communications systems, signal transmission is either analogue or digital. In analogue transmission signals are transmitted in continuously variable form. In digital transmission there are two discrete signal levels representing a binary '1' and binary '0'. In *multilevel signalling systems* the number of signal levels is increased from two, thereby allowing more information to be transmitted in each 'bit'. ➤➤digital communications; digital codes.

signal flowgraph A graphical illustration of the relationships between two-port ➤network parameters and the signals in the network. A signal flowgraph is a network of *directed branches* that are interconnected at *nodes*. The nodes have *node signals*, such as current, voltage, and ➤power waves, and the branches have *branch transmittances* that specify the relationships between the signals at the source and sink nodes. The flow of signals in the graph is governed by the following basic rules: the node signal flows along the branch only in the direction of the arrow, and is multiplied by the transmittance of that branch; a node signal is equal to the algebraic sum of all signals entering that node; the signal at a node is applied to each of the outgoing branches from that node. ➤➤Mason's rules.

signal generator Any electronic circuit or device that produces a variable and controllable electrical parameter. The term is most commonly applied to a device that sup-